

Abstracts

Oral 14

Musculoskeletal disorders II

○14.1 EPIDEMIOLOGY OF LOW BACK AND NECK-SHOULDER PAIN AMONG INDUSTRIAL WORKERS IN IRAN: EXPERIENCE FROM A DEVELOPING COUNTRY

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Introduction: Musculoskeletal pain and disorder is a major health problem in the world. Most low back pain (LBP) and neck-shoulder pain (NSP) epidemiological data is related to developed and industrialised countries and there is little information about LBP and NSP in the general population in developing and low income countries. There are even fewer studies in working populations.

Methods: For generating knowledge about the epidemiology of LBP and NSP in Iran we ran this prospective longitudinal study, to assess cumulative incidence and recurrence of LBP and NSP in an industrial population, and to investigate the association between age, sex, job title, and working experience with incidence and recurrence during a one year follow up period. The entire group of 18 031 employees at car manufacturing company in Iran was included in the study. Baseline data were collected with standardised Nordic Questionnaire and incident cases were defined with special registration system.

Results: During one year follow up the incidence of disabling LBP was 2.1% and the recurrence of disabling LBP was 2.9%. Cumulative recurrence of LBP was 0.3% and 97% of people with LBP at baseline recovered during one year follow up. For NSP the incidence of disabling NSP was 0.1% and the recurrence was 1.3%. Cumulative recurrence of NSP was 0.01 and 99.8% of people with NSP at baseline recovered during one year follow up.

Conclusion: This study is one of the first longitudinal studies in which prevalence, incidence, and recurrence of LBP and NSP were studied simultaneously, with this number of participants in a developing country. The results of this study showed that there is considerable difference between incidence and recurrence rate of LBP and NSP pain in Iran, compared with data from Western countries.

○14.2 WORK RELATED MUSCULOSKELETAL DISORDERS IN THE NORWEGIAN PETROLEUM INDUSTRY

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Introduction: Since 1992 the petroleum industry has reported work related diseases to the Petroleum Safety Authority in Norway. As a part of Norwegian legislation the physicians must report all cases of suspected work related diseases. One of the purposes of reporting is to get information about unhealthy work places to be able to improve them. Some of the companies in the petroleum industry have worked systematically on control measures to prevent work-related musculoskeletal disorders (WRMSD). The aim of this study was to analyse reported WRMSD and reported risk factors (occupation, type of work) from 1995 to 2003.

Methods: Descriptive analyses from the register of work related diseases from the Petroleum Safety Authority in Norway are presented.

Results: During the nine year period 1995–2003 a total of 2875 new cases of WRMSD were reported to the Petroleum Safety Authority in Norway. Musculoskeletal disorders were the most frequently reported work related disease every year apart from 2003. Musculoskeletal disorders accounted for 47% of the diseases during the whole period. The largest numbers of WRMSD were found among workers in catering (21%) and maintenance (40%). The work in these groups is characterised by repetitive work, awkward positions, physical heavy work, and time pressure to some degree. All personnel working offshore work shifts of 12 hours duration for 14 days. Frequently reported risk factors were physical load and repetitive work. There were small variations in type of risk factors of WRMSD from one year to another during the period.

Conclusions: Although the reported number of WRMSD in the Norwegian petroleum industry varied a lot during the period 1995–2003, the incidence of WRMSD seems to be high compared to other work related diseases. Continuous improvement of reporting system should be discussed as well as better use of the information from the system to make strategies for improving the work environment. To prevent WRMSD, control measures should be made for work groups with ergonomically risk factors. Further research on risk factors should also be discussed.

○14.3 PHYSICIANS' ASSESSMENT OF WORK ATTRIBUTION IN REPORTED CASES OF MUSCULOSKELETAL DISORDERS

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Introduction: Musculoskeletal disorders (MSD) are multifactorial in origin and it is difficult to establish work relatedness in individual clinical cases. This study investigated specialist physicians' assessment of newly diagnosed cases of work related MSD.

Methods: A questionnaire was posted to occupational physicians and rheumatologists who reported cases of work related MSD to occupational surveillance schemes (THOR project) between July and December 2004. Information was sought on their assessment of work attribution in one randomly selected case that they had evaluated.

Results: The response rate was 82% (103/125) and included specific diagnoses, such as carpal tunnel syndrome, epicondylitis, rotator cuff syndrome, and less defined MSD such as back or neck pain. Most cases (61%) did not have a previous history of musculoskeletal disorders and 27% were seen by physicians more than one year after the symptom onset. Most (80%) of the cases were deemed to be "caused" by work, rather than aggravated. Work related physical risk factors were reported in all the cases, but other risk factors were also reported, including mental stressors at work (15%), non-work related physical risk factors (19%) and non-work related mental stressors (5%). The most frequently used criterion (40%) for determining work relatedness was the probability that it was "more likely than not" that exposure at work caused the condition. Eighty one physicians had answered this same question, about the threshold of work relatedness for reporting, in a previous questionnaire survey of their general beliefs and practices regarding assessment of MSD. Most of them (73%) used the same or a higher threshold of work relatedness when reporting specific cases (mean 0.81, SD 0.18, in a perceived likelihood scale between 0 and 1) when compared to their previous general responses (mean 0.75, SD 0.15).

Conclusion: Most of the cases of work related musculoskeletal disorders reported by participating physicians were deemed to be caused (rather than aggravated) by work related physical factors, with a judgment mostly based on the probability of "more likely than not".

○14.4 RATIONALE FOR A MULTIDISCIPLINARY INTERVENTION MODEL IN PREVENTING MUSCULOSKELETAL DISORDERS IN NURSING PERSONNEL

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Introduction: Musculoskeletal disorders (MSD) are the most commonly reported occupational diseases within workforces of the European Union. From these MSD low back problems (LBP) constitute the majority of complaints. Authors agree that the nursing profession is at high risk for LBP. The present project aimed to identify occupational variables in relation with MSD in general and with LBP in particular in the nursing profession.

Methods: A booklet composed of different existing validated questionnaires, covering (almost) all in the literature mentioned causes of LBP, was used. The booklet was checked on reliability and validity by calculating Kappa values, performing an ANOVA with paired FRIEDMAN tests and, where appropriate, intraclass correlations. Internal consistency was tested by calculation of Cronbach alpha values.

1783 booklets were distributed in four different Flemish hospitals, of which 1216 were returned and analysed. Analyses were performed for six experimental groups: lifetime prevalence (prev) LBP compared with never had LBP, year-prev. LBP compared with no LBP in the last year, point prev LBP compared with no LBP at moment of filling in the questionnaire. Comparisons were made by means of χ^2 , ANOVA, or Kruskal-Wallis tests where appropriate.

Results: Such as for the previously performed extensive validation of these questionnaires in the English language, the instrument was considered valid and reliable. Due to the high amount of variables that showed a relation with LBP (similar results for the different prevalence groups) factor analysis was expected to produce clusters. However, this failed and therefore a discriminant analysis in 47 steps provided information of the discriminating power of the variables. In summary, psychosocial variables were found to be most discriminating, followed by ergonomic and general health variables.

Conclusion: In the nursing profession, prevention intervention for MSD and LBP in nursing personnel should focus on the three above mentioned areas and one should have hospital management approval and support.

○14.5 COST EFFECTIVENESS OF PHYSICAL TRAINING FOR SELF-EMPLOYED PEOPLE WITH MUSCULOSKELETAL DISORDERS: THE FYSIOKE STUDY DESIGN

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Introduction: Musculoskeletal disorders (MSDs) often cause disability, leading to high costs, especially when it concerns self-employed people. An insurance company that provides income insurance for self-employed people offers those with MSDs physical training to stimulate earlier return-to-work. This tailored training takes place two or three times a week during three months and consists of cardiovascular training, strengthening, relaxation, and posture exercises. The purpose of this study is to determine its cost effectiveness.

Methods: In a randomised controlled trial (RCT), 300 self-employed people with MSDs are randomly assigned to either physical training, or usual care. Outcome measures are level of pain, functional restrictions, disability, and return-to-work. Data are collected by questionnaire at baseline and at 6 and 12 months follow up. These questionnaires contain questions on kind of job, physical and mental workload (VBA), type of complaints (Kuorinka), level of pain (VAS), functional restrictions (NDI, QBPDS), fear of movement (Tampa), treatment, return-to-work, general health, and demographic variables. Additionally, data are derived from the insurance company (disability, costs) and physical training institutes (compliance).

Results: The intake of participants started in November 2004. Preliminary results of the first 52 participants indicate that 67% is working in agriculture, 95% is male, mean age is 44 years, 69% is disabled because of back pain, and 52% has no idea when to return to

work. There are no differences between intervention and control group at baseline.

Discussion: The intake lags behind a little. This may partly be explained by inaccuracy during the intake procedure which is now improved. The main reasons why people do not want to participate are randomisation and time. We started a cohort of persons who do not want to take part in the RCT but are prepared to fill in the questionnaires. This gives us the opportunity to add these persons to the RCT population when possible or to change the study design when necessary.

○14.6 ARE WORKERS AT RISK FOR HAND-ARM AND NECK-SHOULDER SYMPTOMS WHEN USING COMPUTERS FOR LONG DURATION? A SYSTEMATIC REVIEW

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Introduction: Worldwide, millions of workers use the computer on a daily basis. This systematic review aims at summarising the evidence for a relation between long duration of computer use and the development of hand-arm and neck-shoulder symptoms.

Methods: The MEDLINE, NIOSHTIC-2, CISDOC, PSYCINFO, and personal databases were searched for longitudinal studies. The methodological quality of the articles was scored. Articles scoring positive on at least 50% of all items were considered as "high quality". Strong evidence was defined as consistent results from multiple high quality studies, moderate evidence was defined as consistent results from one high quality study and insufficient evidence was defined as inconsistent results or no high quality studies available. Analyses were stratified for the type of computer use (computer, mouse, and keyboard use) and the affected body region (hand-arm and neck-shoulder).

Results: Three articles out of eight were of high quality. For long duration of mouse use (longer than 10–20 hours per week) moderate evidence was found for an association with hand-arm symptoms. Insufficient evidence was available for all other relations.

Discussion: The neck-shoulder region does not seem to be affected by the effect of long duration of computer use, based on findings in both high and low quality studies. The studies included in this review were all based on self-reports of the duration of computer use, which might lead to considerable misclassification at the lower end of the exposure range resulting in risk attenuation. There is a need for high quality studies in general. Furthermore, longitudinal studies with objective exposure assessment are needed to better quantify dose-response relations.

Conclusion: Self-reported mouse use longer than 10–20 hours per week might be a risk for developing hand-arm symptoms, but not for developing neck-shoulder symptoms. Insufficient evidence was available for an effect of long duration of self-reported keyboard and computer use on both investigated regions.